

undulatus, seems a little more complex. In the non-melanistic specimen on which the statements in an earlier paper (Harrison, 1963) were based, many feathers, particularly the wing-coverts, appear white on those portions where melanin is absent, although a closer inspection has revealed very slight traces of yellow. An examination of other specimens shows that there is a range of variation from this to individuals in which such feathers appear almost uniformly yellow. It is not clear which type would represent a simple loss of melanin since the specialised breeding of this species in captivity has produced variations in pigmentation intensity.

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***Pycnonotus plumosus* subsp. with the description of a new subspecies from Bawean Island**

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It is known that in museum material of this species, as with *Pycnonotus simplex* and *P. brunneus*, the plumage is subject to fading and discolouring to such an important degree that we must be very cautious and critical when comparing old skins with freshly obtained material. Also it is of outstanding importance to take into account the age of the skins to be compared when looking for racial characters.

Together with a collection of about 50 fresh skins, for the greater part obtained from the Sunda Strait area and Bawean Island, I critically studied all old material present in the Bogor Museum. Because when describing new races or discussing existing ones of this particular species, much stress has often been laid on differences in wing size, full attention was also paid to such details.

Stressmann⁹ states that *hutzi* is smaller (wing: 78-84 mm. in two adult males and three females) than *insularis* (= *hachisukae*) but we found a wing length of 80-86 mm. in eight *hutzi* against 77-90 in 29 *plumosus* and Chasen and Boden Kloss⁵ give 79-90 mm. as a wing length for *hachisukae*, so that the difference in wing size between *plumosus*, *hutzi* and *hachisukae* seems not very convincing. The subspecies *porphyreus* (wing: 77-91.5 mm.) and *billitonis* (wing: 79-86 mm.) fit well within the wing measurements as found by me for 29 specimens of the nominate race (77-90 mm.). The same holds good for the material of this species collected within the areas in and around the Sunda Strait and on the island of Bawean with wings of 77-90 and 82-90 mm. respectively. But Bawean birds average smaller in the bill and have a longer tail.

Rather large in all their measurements are the few specimens from the Riouw Islands which I examined and they are rather light in plumage making them worth a further study when more material becomes available.

Beyond the differences in size, *hutzi*, *hachisukae* and *billitonis* should be lighter in the colour of the under parts compared with *plumosus*, which means that birds belonging to the nominate race must be very dark, because the skins of *hutzi*, even now—25 and 30 years after they were secured—are dark on the under parts, though doubtless they are much lighter now than when they were collected. This is evident when comparing skins from Bawean secured 25 years ago with a good series of fresh material. Also three skins from Sumatra's east coast (Deli and Palembang) which areas according to Boden Kloss² must be considered as part of the range of the nominate race (see also Peters⁷) still show that dark colour on the under surface very clearly though they were taken 16 and 36 years ago. Owing to this characteristic such birds differ at a glance from much lighter Javan skins, stored during about the same period and under similar conditions. This old Javan material does not differ in this respect from birds from Bawean collected 25 years ago, so that it does not seem justified to include representatives living on Java and Bawean into the nominate race. The under parts are too light, not only when compared with true *plumosus* and still darker *porphyreus* but also with *hutzi* and *hachisukae*.

Mayr⁶ calls *hachisukae* not a very distinct race. As wing length of a male from south Borneo he gives 87 mm. and for two females 81 and 82 mm. and for the length of the tail in 1 ♂ and 4 ♀ 75, 70, 72, 72 and 72 mm., which does not justify Mayr's view that these birds agree with *hachisukae* because of their size: they have a shorter tail, averaging much smaller than 9 ♂ and 8 ♀ from north Borneo, measured by Chasen and Boden Kloss⁵, especially when separating birds from the islands off north Borneo, the real habitat of *hachisukae*: These south Bornean skins perhaps belong to *hutzi* though Peters⁷ only mentions north and east Borneo as the range of this form, restricting the range of *hachisukae* to the islands off Borneo.

The measurements given by Chasen and Boden Kloss for a series of birds from north Borneo give rise to the supposition that north Bornean representatives average somewhat larger in the wing than birds of the nominate subspecies and *hutzi*, and have a longer tail in both sexes. But when separating in this series birds from the islands off north Borneo (5 ♂ 4 ♀) and those from north Bornean mainland (4 ♂ 4 ♀) there is a distinct difference in wing and tail measurements, making it well justified to unite the larger island birds with *hachisukae* and to consider the material secured on the mainland as *hutzi*. In the first category the average wing and tail measurements are: ♂ Wing, 88.40, Tail, 81.40; ♀ W. 87.33, T. 79.25 and for the second group: ♂ Wing, 84.75, Tail, 77.50; ♀ W. 82, T. 71.25 mm. which shows important differences for such a small series.

Chasen and Boden Kloss⁵ pointed to the dissimilarity of both populations, considering the mainland birds *plumosus* \approx *insularis* and Stresemann⁹) too called them somewhat intermediate between real *insularis* (= *hachisukae*) and *hutzi* so far as it concerns the wing measurements.

Lack of fresh material from Java's mainland makes it impossible to separate birds from this island on the strength of a satisfying diagnosis, though the particulars given above clearly show that there is reason to do that because of the very light coloured under parts. The few birds obtained from the most western part of Java seem somewhat intermediate between dark *plumosus* and the lighter populations of more eastern localities

on this island. A single bird collected on the small island of Sangijang in the Sunda Strait and some skins from Ujung Kulon, Java's most western peninsula, seem to be the representatives of such a light coloured population. But until there is more fresh material from Java I think it better to indicate the population on Java as *Pycnonotus plumosus* subsp. in order to make it clear that these birds cannot be united with the nominate race from the Malay Peninsula and Sumatra's east coast. After having examined a large series of fresh skins collected on Prince's Island, Sebesi, Sebuku and Legundi (Sunda Strait area), I think it justified to include those islands into the range of the nominate subspecies.

After comparing this material with the good series we obtained on Bawean Island it cannot be doubted that birds living here need to be separated, not only on account of their lighter under parts but also because of the different colour of the upper surface. The different tone of the under surface is striking when comparing fresh material but it is still noticeable—though to a smaller degree—when comparing Bawean skins from 1928 with those from Sumatra obtained in 1939.

On account of the light under parts, the Bawean birds may show some resemblance to *hachisukae* from certain islands off Borneo, also separated on account of its light under parts, but Mayr⁶ does not mention this character for the five birds from south Borneo, which were classified as *hachisukae* because of their similarity in size only, making it probable that colour differences with *plumosus* are not very strikingly present.

Five skins borrowed from Singapore's National Museum, belonging to *hachisukae*, indeed do not differ in the tint of the under parts from representatives of the nominate race: the belly and the under tail-coverts are even darker than in the average *plumosus* and this difference is very distinct after comparison with birds from Java. These *hachisukae* specimens have decidedly darker under parts than has *billitonis*.

On the upper surface they do not differ from birds of the nominate race secured at about the same time. These old *hachisukae* skins are strikingly darker on the upper as well as on the under parts than birds from Bawean Island obtained at about the same period (1927/28) which makes it at once impossible to unite them. Also when comparing our old Bawean material with large series from west Java, present in the Leiden Museum, the same differences were established as was the case after comparison with the Bogor material.

A small series (5 ♂ 1 ♀) recently collected in east Borneo, differs from the Bawean birds on account of the somewhat darker under surface and darker upper parts, especially because of their darker tail. Moreover the wings (5 ♂: 82–84 1 ♀: 79 mm.) and tail (5 ♂: 71–74 1 ♀: 68 mm.) are considerably shorter but the bill averages heavier (5 ♂: 14.5–15.5 1 ♀: 14 mm.)

83

72.60

14.75

when compared with Bawean's population of the species.

Because of the small size of wing and tail in these Bornean birds it seems right to consider them *hutzi* and not *hachisukae*.

I propose to separate Bawean birds of this species under the name:

Pycnonotus plumosus siberi subsp. nov.

Types: ♂ Mus. Bog. No. 22.868, 5th June, 1954, Central Bawean.

♀ Mus. Bog. No. 22.879, 25th June, 1954, South Bawean.

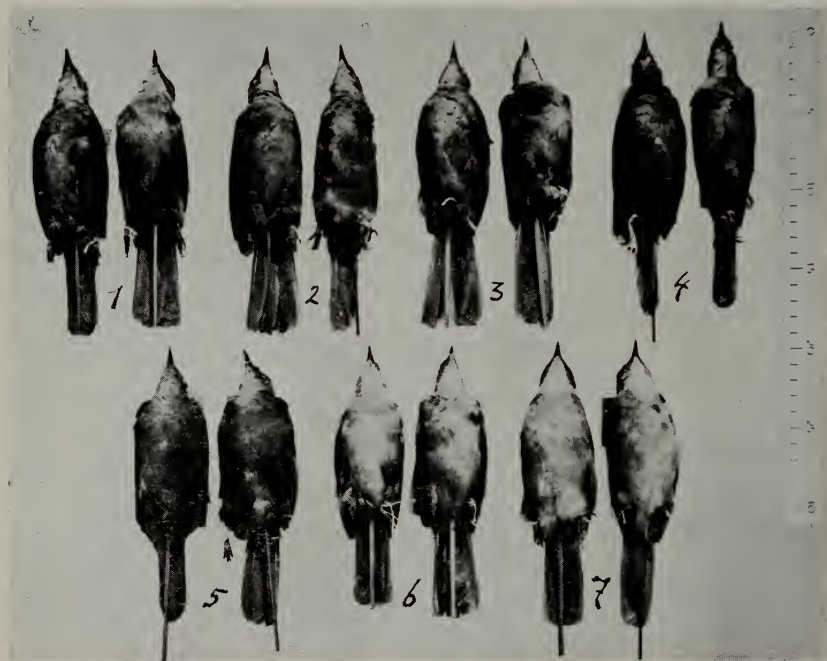
leg. A. Hoogerwerf

Description: ♂ ♀ Bill averages a trifle smaller in both sexes than in any other subspecies known from Indonesia, especially in the females. Tail averages longer than in nearly all birds of the other Indonesian races, except perhaps *hachisukae*.

Averaging much lighter on the under parts than *plumosus* and *porphyreus* and still lighter than *hutzi* and *hachisukae*, but perhaps rather similar to *billitonis* which—however—has a longer bill and averages in being smaller in wing and tail measurements.

Compared with all these subspecies the colour of the under parts is paler and less washed with olive in the dark parts. The brown on the lower belly and under tail-coverts is duller, less clear olive brown when compared with skins from other localities, obtained at about the same time, most resembling Javan birds.

On the upper surface *siberi* is a trifle duller than fresh *plumosus*, less washed with green, especially on lower back and tail-coverts. When compared with fresh *hutzi* from east Borneo, it is evident that *siberi* is

♂♀ *Pycnonotus p. plumosus* (freshly collected).

1. Ujung Kulon; 2. Prince's Island (Sunda Strait); 3. Sebesi Island (Sunda Strait);

4. South Sumatra; 6. Bawean Island, *Pycnonotus plumosus siberi* subsp. nov.♂♂ *Pycnonotus plumosus* (old material)5. *Pycnonotus plumosus porphyreus*: West Sumatra; 7. *Pycnonotus plumosus siberi* subsp. nov.

still lighter on the under parts and also on the upper surface, especially on the tail which makes it possible to separate at a glance birds belonging to both these races, also without considering size differences.

The racial colour differences become less striking in old material which show much fading and discolouring.

Irides red or brownish-red; light brown in juveniles.

Distribution: Bawean Island (Java Sea, between Java and Borneo).

The subspecific name is devoted to one of the first Heads of the Civil Administration of Bawean Island, Mr. J. Alting Siberg¹ who was the first author to publish particulars concerning the fauna of this island.

Measurements (in mm.)

♂♂ *Wing*: *plumosus* (Java): 82, 83, 85, 87, 89; *plumosus* (Leiden material, Java): 80, 85, 87, 88; *plumosus* (Prince's Island): 78, 85, 85, 86, 86, 86, 87, 87, 89, 90; *plumosus* (other islands Sunda Strait): 85, 87, 87, 88, 88, 89; *plumosus* (Udjung Kulon, west Java): 89; *plumosus* (Riouw Islands): 89, 89; *plumosus* (Sumatra): 82, 83; *sibergi* (Bawean Island): 85, 85, 86, 87, 87, 87, 88, 88, 88, 88, 90, 90; *billitonis* (Billiton Island): 82, 86; *porphyreus* (Sumatra): 82, 88; *hutzi* (Borneo): 81, 82, 86; *hachisukae* (Borneo): 86, 87, 87, 88, 90; *hachisukae* (Leiden-material, Borneo): 85, 89;

Tail: *plumosus* (Java): 70, 70, 76, 77, 78; *plumosus* (Leiden material, Java): 70, 73, 77, 79; *plumosus* (Prince's Island): 67, 67.5, 71, 71.5, 71.5, 72, 73.5, 78, 80, 81; *plumosus* (other islands Sunda Strait): 71, 72.5, 73, 75, 78, 78; *plumosus* (Udjung Kulon): 72.5; *plumosus* (Riouw Islands): 77.5, 79; *plumosus* (Sumatra): 71, 75.5; *sibergi* (Bawean Island): 73, 74, 77, 77, 77, 78, 78, 79, 79, 80, 80, 83; *billitonis* (Billiton Island): 74, 77; *porphyreus* (Sumatra): 66.5, 70.5; *hutzi* (Borneo): 67, 68, 70.5; *hachisukae* (Borneo): 75, 77, 78, 80, 82;

Culmen: *plumosus* (Java): 12, 13.5, 14, 15, 16; *plumosus* (Leiden material, Java): 14, 14, 15, 17; *plumosus* (Prince's Island): 13, 13, 13, 14, 14, 14.5, 15, 15, 15.5, 17; *plumosus* (other islands Sunda Strait): 13.5, 15, 15, 15, 16, 16; *plumosus* (Udjung Kulon): 14.5; *plumosus* (Riouw Islands): 14.5, 16.5; *plumosus* (Sumatra): 13, 14.5; *sibergi* (Bawean Island): 12.1, 12.1, 12.2, 12.4, 12.9, 13.4, 13.5, 14, 14.9, 15, 15; *billitonis* (Billiton Island): 15, 15; *porphyreus* (Sumatra): 13, 16; *hutzi* (Borneo): 14.5, 14.5, 15.5; *hachisukae* (Borneo): 13.9, 14, 14.2, 15, 15.

Max., min. and average measurements:

	<i>plumosus</i>						
	Java	Java Leiden material	Prince's Island	Strait Sunda	Udjung Kulon	Riouw	Sumatra
<i>Wing</i> :	82-89	80-88	78-90	85-89	89	89, 89	82, 83
	85.20	85	85.90	87.33		89	82.50
<i>Tail</i> :	70-78	70-79	67-81	71-78	72.5	77.5, 79	71, 75.5
	74.20	74.75	73.30	74.58		78.25	73.25
<i>Culmen</i> :	12-16	14-17	13-17	13.5-16	14.5	14.5, 16.5	13, 14.5
	14.10	15	14.40	15.09		15.50	13.75

	<i>sibergi</i> Bawean	<i>billitonis</i> Billiton	<i>porphyreus</i> Sumatra	<i>hutzi</i> Borneo	<i>hachisukae</i> Borneo
Wing:	85-90 87.42	82, 86 84	82, 88 85	81-86 83	85-90 87.43
Tail:	73-83 77.92	74, 77 75.50	66.5, 70.5 68.50	67-70.5 68.50	75-82 78.40
Culmen:	12.1-15 13.41	15, 15 15	13, 16 14.50	14.5-15.5 14.83	13.9-15 14.42

♀ Wing; *plumosus* (Java): 80, 81, 82, 83, 84; *plumosus* (Leiden material, Java): 80, 81, 84, 84, 86; *plumosus* (Prince's Island): 81, 82, 83, 83, 84; *plumosus* (other islands Sunda Strait): 82, 82, 82, 84, 84, 84, 85, 85; *plumosus* (Udjung Kulon): 77, 80, 82, 84, 87; *plumosus* (Sumatra): 77; *plumosus* (Riouw Islands): 83, 83, 85; *sibergi* (Bawean Island): 82, 82, 83, 84, 85, 85, 85, 85; *billitonis* (Billiton Island): 82, 83; *porphyreus* (Sumatra): 83, 88; *hutzi* (Borneo): 80, 80, 80, 80, 86; *hachisukae* (Leiden material, Borneo): 79, 80, 82, 85;

Tail; *plumosus* (Java): 71.5, 71.5, 72, 75, 76; *plumosus* (Leiden material, Java): 69, 72, 75, 77; *plumosus* (Prince's Island): 68.5, 69, 69.5, 73, 78.5; *plumosus* (other islands Sunda Strait): 67, 67, 69, 70, 72, 72, 72, 72; *plumosus* (Udjung Kulon): 62, 71, 75, 76; *plumosus* (Sumatra): 70; *plumosus* (Riouw Islands): 75, 75, 75; *sibergi* (Bawean Island): 71, 72, 73, 74, 74, 75, 76, 78; *billitonis* (Billiton Island): 64, 73.5; *porphyreus* (Sumatra): 72.5, 75; *hutzi* (Borneo): 65, 67, 68, 70.5, 76.5;

Culmen; *plumosus* (Java): 12, 12.5, 14.5, 14.5, 15; *plumosus* (Leiden material, Java): 14, 14, 14, 15, 16; *plumosus* (Prince's Island): 13, 13.5, 14, 14.5, 15; *plumosus* (other islands Sunda Strait): 14, 14, 14.5, 15, 15, 15, 15.5, 16; *plumosus* (Udjung Kulon): 14, 15, 15.5, 16; *plumosus* (Sumatra): 14; *plumosus* (Riouw Islands): 14.5, 15.5, 16.5; *sibergi* (Bawean Island): 11.6, 11.9, 13, 13.6, 14, 14, 14.1, 14.9; *billitonis* (Billiton Island): 14, 15; *porphyreus* (Sumatra): 13.5, 15; *hutzi* (Borneo): 13, 13.5, 14, 14, 14.5.

Max., min. and average measurements

	<i>plumosus</i>						
	Java	Java, Leiden material	Prince's Island	Sunda Strait	Udjung Kulon	Sumatra	Riouw Islands
Wing:	80-84 82	80-86 83	81-84 82.60	82-85 83.50	77-87 82	77	83-85 83.67
Tail:	71.5-76 73.20	69-77 73.25	68.5-78.5 71.70	67-72 70.13	62-76 71	70	75, 75, 75 75
Culmen:	12-15 13.70	14-16 14.60	13-15 14	14-16 14.88	14-16 15.13	14	14.5-16.5 15.50

	<i>sibergi</i> Bawean	<i>billitonis</i> Billiton	<i>porphyreus</i> Sumatra	<i>hutzi</i> Borneo	<i>hachisukae</i> Borneo, Leiden material 79-85
Wing:	82-85 <hr/> 83.88	82, 83 <hr/> 82, 50	83, 88 <hr/> 85.50	80-86 <hr/> 81.20	<hr/> 81.65
Tail:	71-78 <hr/> 74.13	64, 73.5 <hr/> 68.75	72.5, 75 <hr/> 73.75	65-76.5 <hr/> 69.40	
Culmen:	11.6-14.9 <hr/> 13.39	14, 15 <hr/> 14.50	13.5, 15 <hr/> 14.25	13-14.5 <hr/> 13.80	

Some measurements compiled from literature

Chasen & Boden Kloss⁵; *hachisukae* (north Borneo):

9 ♂ Wing: 84-90 (island birds: 87-90; mainland birds: 84-86)

86.78

88.40

84.75

Tail: 75-84 (island: 79-84; mainland: 75-80)

79.67

81.40

77.50

8 ♀ Wing: 79-88 (island: 86-88; mainland: 79-85)

84.29

87.33

82

Tail: 68-81 (island: 76-81; mainland: 68-74)

75.25

79.25

71.25

Stresemann⁹; *hachisukae* (Banguay Island, north Borneo):

♂♂ Wing: 87-90

♀♀ Wing: 86-88

hutzi (northeast Borneo):

♂♂ Wing: 81, 82

♀♀ Wing: 78, 81, 84

Chasen⁴; *billitonis* (Billiton Island):

♂♂ Wing: 83, 83, 86; ♀ 80

de Schauensee & Ripley⁸; *porphyreus* (Islands off west Sumatra):

Nias Island; ♂♂ Wing: 81.5, 86

Batu Island; ♂♂ Wing: 88, 88, 90, 90, 90, 91, 91, 91.5 (average 89.94)

♀ Wing: 88.50

North and south Pagi Island; ♂♂ Wing: 84, 86.5

♀♀ Wing: 77, 78, 82

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